threadably engaged by threads 16,26. At a lower end point 27 of thread 26 is a rib or protuberance 272 depending axially downward and extending radially outward from an outer surface 23 of container neck 15. The rib or protuberance 272 creates a stop for the closure 10 beyond which the 5 closure 10 cannot be further threaded onto the container 14. Protuberance 272 is preferably designed to inhibit breakage during an automated mechanical installation of the closure 10. Protuberance 272 is also preferably shaped such that thread 16 should not accidentally slide over or past lug 236. 10 Also rib or protuberance 272 and thread 16 are preferably positioned to engage when the container 14 is properly sealed and a predetermined torque is placed on the threads 16,26.

Child Resistance Feature

The instant invention may also include a child resistance feature. As shown in FIG. 8, a first embodiment of a child resistance feature 300 of the closure-container package of the instant invention includes a feature which inhibits individuals of a tender age from accessing and accidentally 20 ingesting medication or other harmful chemicals. Moreover, the child resistant features 300 of the present embodiment require dissimilar movements to open the container 14 yet still allows those with, for instance, arthritis to easily access the contents of the container 14 when needed. In the first 25 embodiment, the child resistant ("CR") feature 300 has at least one pair of CR closure lugs 312 and 314 depending from a lower peripheral edge of skirt 18. Extending radially outward from and axially upward along container neck 15 is CR container lug 316. A set of lugs may be located 180 30 degrees opposite 312,314,316 to provide additional child resistance and utilize the ovalized flex of the closure described below. As closure 10 is threadably rotated onto the container 14, lug 312 first encounters lug 316. With continued torque application to the closure 10, the lug 312 will 35 pass over lug 316. To facilitate lug 312 moving past lug 316, lug 312 may have a tapered inner surface such that it may pass over lug 316 during application of closure 10 to container 14. As lug 312 passes lug 316, lug 312 becomes a child resistant member because the closure 10 cannot be 40 unscrewed by merely rotating the closure 10 in the opposite direction as it was applied. Preferably surfaces of CR lugs 312,316 which abut one another when CR lug 316 is positioned between CR lug 312,314 are sized such that CR lug 312 cannot slide past CR lug 316 without a second 45 dissimilar movement. In addition, lug 314 acts as an on-direction stop mechanism since further rotation of closure 10 onto container 14 is inhibited.

Located preferably about 90 degrees to lugs 312,314 are pressure points 318,320. Depressing the closure 10 at these 50 pressure points 318,320 results in maximum ovalized flexure of the closure 10. As described above, closure 10 may be made of injection or compression molded plastic. The thickness of the closure skirt 18 is preferably such that it will deflect when a pressure is applied. By applying pressure to 55 the lower portion of closure skirt 18 in two locations about 180 degrees apart the skirt 18 will flex radially outward along an axis 90 degrees from the application of pressure. This causes the closure 10 to distort to an ovalized shape while the pressure is applied which results in maximum 60 displacement of CR lugs 312,314 such that CR lug 312 can be backed over CR lug 316 as the closure is unscrewed.

Alternatively, in a second embodiment of a CR feature 330 of the present invention, a single closure CR lug 340 may depend from a lower peripheral edge of the skirt 18 while a pair of container CR lugs 342,344 are extending from an outer surface 23 of the container 14. In this

embodiment, shown in FIG. 9, the closure CR lug 340 must pass container CR lug 342 as the closure 10 is screwed onto the container 14. To ease the closure CR lug 340 past container CR lug 342, container CR lug 342 may be tapered from thin to thick along its outer surface in a clockwise direction. Once closure CR lug 340 is seated between container CR lugs 342, 344 container CR lug 344 acts as an on-stop device inhibiting the further torquing of closure 10 onto container 14. As well, container lug 342 becomes a child resistance mechanism because the closure CR lug 340 will not pass container CR lug 342. This embodiment employs pressure points 318,320 located 90 degrees from closure lug 340 as the above described embodiment. When depressed, the pressure points 318,320 permit maximum ovalized deflection of the closure and outward deflection of the CR lug 340. Thus a user may simply depress the pressure points and unscrew the closure 10 such that closure CR lug 340 passes container CR lug 342. Without depressing the pressure points 318,320 the container CR lug 342 is a child resistance feature and does not allow closure CR lug 342 to pass.

Tamper Indicating Band

A tamper indicating band ("TI band") 400 may also be used in combination with the above described embodiments, depicted in FIGS. 10 and 11. The TI band 400 is preferably attached to the lower peripheral edge of closure 10 by a plurality of frangible webs or bridges 415. The TI band 400 may have a plurality of internal ratchets 410 located around an inner surface thereof. A plurality of external ratchets 420 are disposed about the outer surface 23 of container neck 15 for engaging with internal ratchets 410 when the closure container package 50 is initially opened. The internal ratchets 410 and external ratchets 420 may be substantially trapezoidal or triangular in shape and are each preferably angled such that when closure 10 is rotatably screwed onto container 14, ratchets 410 will easily pass over ratchets 420. However, when closure 10 is rotated in an opposite direction, the ratchets 410 operably engage a plurality of ratchets 420 extending from an outer surface of the container 14 and the frangible webs or bridges 415 break. This leaves the TI band 400 on the container 14 showing that the closure-container package has been previously opened.

Of course, many types of interference mechanisms may be utilized between a TI band and a container neck and these variations such as lugs, folding fingers, and other abutting or contacting surfaces are within the scope of teaching herein.

The foregoing detailed description is given primarily for clearness of understanding and no unnecessary limitations are to be understood therefrom for modifications will become obvious to those skilled in the art upon reading this disclosure and may be made without departing from the spirit of the invention and scope of the appended claims.

- 1. A threaded closure-container package, comprising:
- a container having a shoulder and a neck extending upward from said shoulder and having an external thread;
- a closure having a top wall and a skirt depending from a peripheral edge of said skirt top wall, said skirt having an internal thread mating said external thread;
- said closure having a rotary seal operably connected thereto;
- said closure and container each having at least one on-direction stop mechanisms;
- said on-direction stop mechanism including a lug depending from said top wall and extending inwardly from said skirt;